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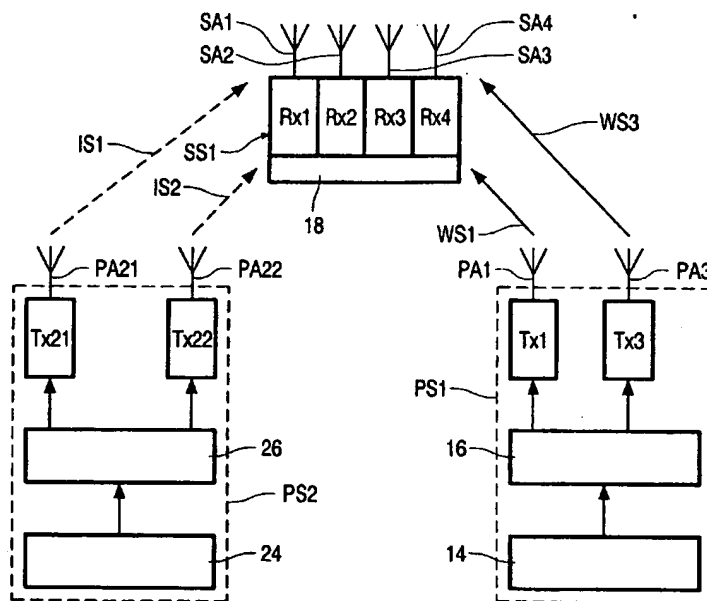Lane, Redhill, Surrey RH1 5HA (GB).

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(54) Title: PACKET DATA TRANSMISSION IN A MIMO SYSTEM

(57) Abstract: A packet data transmission system comprises primary stations (PS) having signal transmitting and receiving means and antennas (PA1 to PA4) for propagating downlink signals and receiving uplink signals and a plurality of secondary stations (SS) able to roam within the coverage areas of the primary stations. Each secondary station (SS1) has signal transmitting and receiving means, a predetermined number of antennas (SA1 to SA4), and means for monitoring its radio environment. Information about the radio environment is relayed as an uplink signal to the respective primary station which modifies its mode of transmission of packet data signals. The secondary station in response to the modified mode of transmission of the downlink signals adapts its receiver resources to process the packet data signals and effect cancellation of any interference.

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